

### **REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on December 14, 2007, and the references cited therewith and respectfully requests reconsideration and allowance in view of the following comments.

#### **Claim Amendments**

Independent claims 1, 7 and 12 have been amended. Support for these amendments may be found throughout the application, for example, in paragraph [0040] of the published application. In addition, claim 3 has been amended to reflect the amendments made to independent claim 1. No new matter is believed to have been added.

#### **Claim Rejection – 35 U.S.C. § 103**

Claims 1-3, 7-8 and 18 were rejected under 35 U.S.C. § 103(a) as being obvious over Applicant's admitted prior art (AAPA). Claims 4-6 and 9-11 were rejected under 35 U.S.C. § 103(a) as being obvious over AAPA in view of Gilliland et al. (U.S. Patent No. 6,711,189, hereinafter "Gilliland"). Claim 12 was rejected under 35 U.S.C. § 103(a) as being obvious over AAPA in view of Kenny (U.S. Patent No. 6,654,656, hereinafter "Kenny"). Claims 13-17 were rejected under 35 U.S.C. § 103(a) as being obvious over AAPA and Kenny in further view of Diaz et al (U.S. Patent No. 6,822,987, hereinafter "Diaz"). Applicant respectfully requests reconsideration and withdrawal of these rejections in view of the following comments.

In rejecting all of the claims, and in particular independent claims 1, 7 and 12, the present Office Action relies upon AAPA as disclosing controlling "the duty cycle of the pulse data output signal based on an approximation of an average power of the pulse data output signal ('approximation' from #18 and #22, compared in #20, also resistor/capacitor network setup in #18 would act as an averager)." Applicant respectfully requests reconsideration in view of the following comments.

With this amendment, independent claims 1 and 17 have been amended to generally recite, *inter alia*, a duty cycle control circuit, including an average power approximation circuit comprising a capacitor coupled to a first input terminal of a current steering device and an output terminal of an operational amplifier, wherein the capacitor is configured to generate an average

power signal approximating an average power of the pulse data output signal. The independent claims further specify that the current steering device is configured to receive the average power signal and to control or adjust the duty cycle of the pulse data output signal based, at least in part, on the average power signal of the pulse data output signal. Independent claim 7 has also been amended to recite a method comprising:

- generating a pulse data output signal in response to an input signal, the pulse data output signal comprising a duty cycle;
- receiving and integrating at a capacitor an amplified signal from an output signal of an operational amplifier to generate an average power signal approximating an average power of the pulse data output signal; and
- receiving at a first input terminal of a current steering device said average power signal to control the duty cycle of the pulse data output signal based, at least in part, the average power signal.

As noted above, the present Office Action suggests that the duty cycle adjustment circuit 16 of AAPA controls the duty cycle based on an approximation of the average power of the pulse data output signal generated by elements #18 and/or #22. Applicant respectfully submits that AAPA is only understood to disclose or suggest that element #22 generates “a voltage representative of a DC voltage on the differential terminals 24 at 100% duty cycle” (see paragraph [0006] of the published application, emphasis added.) Accordingly, Applicant respectfully submits that one of ordinary skill in the art would understand element #22 to generate a signal representing a reference voltage at 100% duty cycle, not an approximation of the actual average power of the pulse data output signal. As such, Applicant respectfully submits that element #22 cannot be fairly said to disclose or suggest generating an average power signal approximating an average power of the pulse data output signal as generally recited in independent claim 1, 7 and 12.

Turning now to element #18 of AAPA, Applicant notes that the present Office Action suggests that the “resistor/capacitor network setup in #18 would act as an averager.” Without conceding that the output of element #18 may be an approximation of the average power as suggested in the present Office Action, Applicant respectfully submits that capacitor of element #18 is not understood to be coupled to a first input terminal of a current steering device and an output terminal of an operational amplifier as generally recited in the amended independent claims. In contrast, at best the capacitor of element #18 is understood to be coupled to an *input*

(not an output) of operational amplifier 20. Moreover, capacitor of element #18 is *not* understood to be coupled to a first input terminal of a current steering device.

Moreover, even assuming *arguendo* that the output of either element #18 and/or element #22 is an approximation of the average power as suggested in the present Office Action or that the output of element #22 (again, a point which Applicant does not concede), Applicant respectfully submits that nothing in AAPA is understood to disclose or suggest that the signal received by the duty cycle adjustment circuit 16 is an approximation of the average power of the pulse data output signal. As shown in FIG. 1 and discussed in paragraph [0008] of the present application, the output element #22 and the capacitor of element #18 are both understood to be received by the operational amplifier 20. Moreover, AAPA only is understood to teach that the “output of the operational amplifier 20 is then provided to the duty cycle adjustment circuit 16 to affect the DC voltage on terminals 24” (see paragraph [0006] of the published application.) Upon review of AAPA, Applicant respectfully submits that nothing in AAPA is understood to disclose or suggest that the signal from the operational amplifier 20 which is received by the duty cycle adjustment circuit 16 is an approximation of the average power of the pulse data output signal. Accordingly, Applicant respectfully submits that AAPA cannot be fairly said to disclose or suggest controlling the duty cycle of a pulse data output signal based on an approximation of the average power of the pulse data output signal as suggested in the present

In light of the above, Applicant respectfully submit that element #22 referenced in the present Office Action is only understood to generate a reference signal at 100% duty cycle and is not understood to generate a signal approximating the average power of the pulse data output signal. In addition, Applicant respectfully submits that neither element #22 nor the capacitor of element #18 referenced in the present Office Action is understood to be coupled to a first input terminal of a current steering device and an output terminal of an operational amplifier. Finally, Applicant respectfully submits that nothing in AAPA is understood to disclose or suggest that the signal received by the duty cycle adjustment circuit 16 is an approximation of the average power of the pulse data output signal. Accordingly, Applicants respectfully submit that AAPA is not understood to disclose or suggest all of the limitations recited the independent claims

Applicant respectfully submits that the additional teachings of the remaining references do not remedy the deficiencies of the primary reference (i.e., AAPA), nor have they even been

asserted to provide such teachings. Accordingly, Applicant respectfully submits that the rejection of independent claims 1, 7 and 12 under 35 U.S.C. § 103 may now be withdrawn upon reconsideration.

The remaining claims depend, either directly or indirectly, from independent claims 1, 7 or 12. Therefore, Applicants respectfully submit that the remaining claims are also allowable by virtue of their dependency from independent claims 1, 7 or 12 in addition to their own patentable limitations.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (603-668-6560) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-4238.

Respectfully submitted,

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